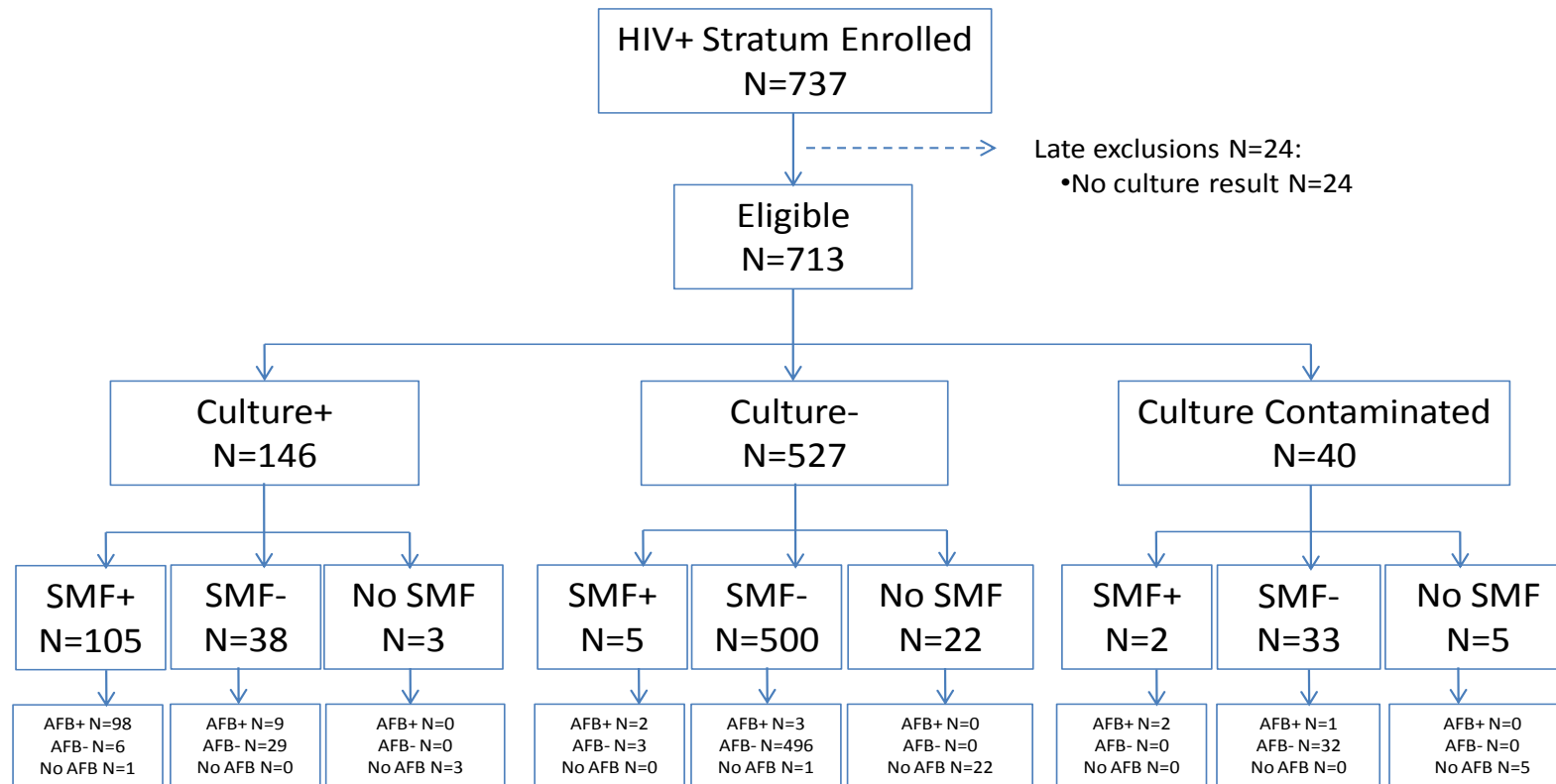


## **Supplemental Material (FOR publication)**

### **Power estimation.**

The study was powered for precision in the estimate of sensitivity, as defined by the half width of the 95% confidence interval (CI), and to evaluate the diagnostic accuracy of HIV-infected and uninfected groups separately. Sample sizes allowed for 10% with insufficient sample volumes for testing. For the HIV-infected group, the sample size of 740 participants was expected to yield 135 culture-confirmed TB patients and >90% power was expected for the SMF comparison to direct smear, assuming sensitivity of direct smear and SMF of 25% and 50%, respectively, if the percentage discordant is 35% and odds ratio is 6.0. Precision of the sensitivity estimate was expected to be  $\pm 8.5\%$ . For the HIV-uninfected group, the sample size of 310 was expected to yield 75 culture-confirmed TB patients and >99% power to detect a difference in sensitivity between direct smear and SMF of 90% and 60%, respectively, if the percentage discordant is 36.6% and the odds ratio is 10.0. Precision of the sensitivity estimate with this sample size for HIV-uninfected individuals, was expected to be 7.3%.

**Supplemental Figure 1:** Comparison of 2 AFB vs. 2 SMF in HIV-infected stratum.



**Supplemental Figure 2:** Comparison of 2 AFB vs. 2 SMF in HIV-uninfected stratum.

